Grow North Workshop at Black Isle Permaculture & Arts, May 6th
Permaculture in the Garden

Permaculture workshop design for 6th May - Introduce 3 ethics and 12 principles on walk-around site and looking at examples of each and how they can be incorporated in our designs - then workshop lasagne mulch and hugel bed II

This workshop will provide an Introduction to the principles, ethics and basics of Permaculture. During the session we'll look at practical examples of Permaculture design and how they can be applied to create sustainable habitats.
We'll touch on forest gardening, no dig gardening, perennial veg, mulching, elements, functions and stacking, and look at how they can be integrated into your garden with hands on activities.
At the end we'll give further info on the Permaculture Association, resources, and help on where to go next

Permaculture is an ethically based, whole-systems design approach to create sustainable human settlements and institutions. Although rooted in horticulture and agriculture, permaculture design also touches on regional planning, ecology, animal husbandry, technology, architecture and international development.

The 'Prime Directive of Permaculture'
"The only ethical decision is to take responsibility for our own existence and that of our children." Bill Mollison.

Defining what the Permaculture design system, its ethics and principles which are
- Earth Care
- People Care
- Fair share

Permaculture Ethics

- Care of the Earth
- Care of People
- Fair Share

& Design Principles

1. Observe & interact
2. Catch & store energy
3. Obtain a yield
4. Apply self-regulation & accept feedback
5. Use & value renewable resources & services
6. Produce no waste
7. Design from patterns to details
8. Integrate rather than segregate
9. Use small & slow solutions
10. Use & value diversity
11. Use edges & value the marginal
12. Creatively use & respond to change

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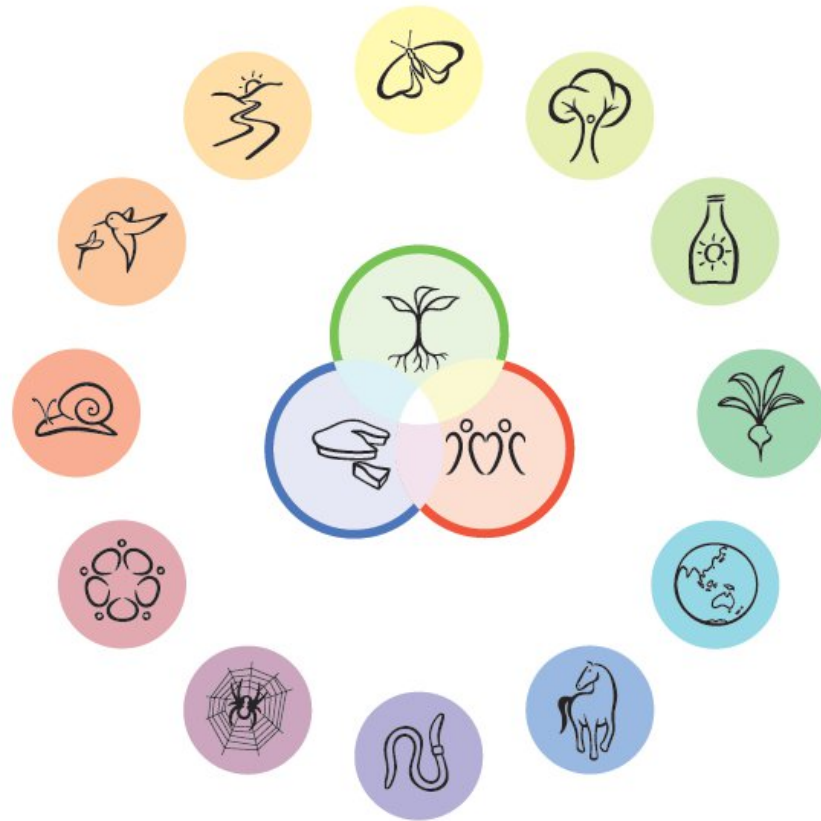
12 Design Principles of Permaculture

1. Observe and Interact:
By taking time to engage, observe and interact with nature you can design a solution that is most appropriate to your situation
- visual logs – recording the changes on the plot through the seasons, anything we noticed can g in here!
- look at the meadow and explain why we've decided to keep it as habitat for bees and insects, as well as a forage space

2. Catch and store energy:
By developing systems that collect resources when they are abundant, such as seasonal rainfall, we can use them in times of need as well as make sure there will be enough resources for future generations
- Solar thermal (sun)
- Water butts (water)
- Washing line (wind)
- Composting (biomass)
- Conservatory & S facing windows (suns)

3. Obtain a yield:
Design your system to create self reliance and to ensure that you are generating useful produce as part of the work that you are doing
- harvesting – foraged, perennials, fruit, annuals
- biomass for composting
- Wood fuel – even if just for kindling

- Abstract e.g. views, sit-spots, 'cuteness' of chickens, etc.

4. **Apply self regulation and accept feedback:**
Limit or discourage inappropriate activity or growth within your system to ensure that it can continue to function well. Ideally, strive for a self maintaining and regulating system, therefore make each element of your system as self efficient as possible
- Recycling – material store at side of shed
- Evaluate how well something works or how efficient it is e.g. we've currently got a diesel vehicle, but use as little as possible. In future would like a different solution.

5. **Use and value renewable resources and services:**
Make the best use of abundant natural and renewable resources to reduce our impact on the environment and our dependence on non-renewable resources.
- Energy coming into the house – sun, solar thermal and pellets
- Try to re-use everything – wood, metal, glass, cardboard, etc. struggling with plastic film!
- Saving seeds
- Wood pile

6. **Produce no waste:**
Value and use all resources and design your system to make use of all outputs so that you produce no waste.
- Close input / output loops e.g. re-use plastic pots, loo rolls, etc. as seed trays
- chicken bedding/manure into compost

7. **Design from patterns to details:**
Take time to step back to observe patterns in nature and society, this will enable you create a framework for your system and you can fill in the detail as you go.
- coniferous forest garden – mimicking habitat of Mondah Mor

8. **Integrate rather than segregate:**
The correct placement of elements within your system is crucial. Placing the right things in the right place will create relationships between elements so that they will support each other. Make sure to remember that each element performs many functions and each function is supported by many elements.
- Forest garden
- Companion planting

9. **Use small and slow solutions:**
More often than not fast solutions only last for a short time, whereas solutions that take longer to put in place, work and last for a much longer period of time. Therefore, start small, as small systems are easier to maintain.
- Veg garden was too much in one go
- Expand guilds around the food trees
- Planning irrigation using water butts and gravity

10. **Use and value diversity:**
Diversity reduces vulnerability and provides insurance against the vagaries of nature.
- Lots of different habitats – meadow, woodland, orchard
- different plants & beneficial weeds – easier to grow nettles than spinach, and a dynamic accumulator too

11. **Use edges and value the marginal:**
The edge between two entities is often where the most rich, diverse and unique products are created and the most interesting events occur.

- Hedge is a great forage space with views, many different plants growing and little 'work'

12. **Creatively use and respond to change:**
Change is inevitable, but by carefully observing and acting in a positive way at an appropriate time you can turn a change for the worse to a change for the better.
- There was an old greenhouse base on site – rather than dig out the hard standing we've modified it for parking.
- Willow split – rather than fell we decided to pollard it to create habitat.
- Transition Black Isle- working to change across Black Isle!

Our aim is to observe nature to mimic natural systems such as forests which create all their own inputs. Creating a closed system which does not produce 'waste' (defined as unused resources), capturing and cycling energies and resources around the system, producing greater yields than input over time, making resilience and relationships between functions and elements, incorporating stacked functions.

Workshop elements
Hugel herb bed https://permaculturenews.org/2010/08/03/the-art-and-science-of-making-a-hugelkultur-bed-transforming-woody-debris-into-a-garden-resource/

lasagne mulch on tattie bed https://www.theguardian.com/lifeandstyle/2011/feb/26/alys-fowler-lasagne-gardening

Useful Resources and websites

Permaculture Association https://www.permaculture.org.uk/

ScotLAND https://scotland.permaculture.org.uk/

Permaculture Magazine https://www.permaculture.co.uk/

Transition Black Isle http://www.transitionblackisle.org/

http://www.permaculture.net/about/definitions.html

http://www.co-intelligence.org/P-permaculture.html

http://www.theecologist.org/green_green_living/gardening/451581/a_beginners_guide_to_permaculture_gardening.html

Hugelkultur in the garden

Typically used to create mounds which are then planted on, however, due to the contours of the garden we're using to help with terracing. It uses garden waste to create a deep pile of biomass which decays slowly, providing nutrients, improving soil structure, and the woody material acts like a sponge holding water. Examples of materials:

- logs & branches
- leaves
- grass clippings
- straw
- cardboard & newspaper
- manure
- compost
- seaweed, etc..

We're combining this with 'lasagne' mulching in order to create 2 no-dig beds.

1. Old tattie bed

   We tried using leaves from the woodland and grass clippings to mulch and mound up the tatties, however, the wet summer meant this became a haven for slugs. To create a good growing space in future we're going to try a lasagne mulch on top, plant this with some green manures, and put out some slug traps!

2. Herb Terrace No. 2

   We created the first herb terrace as it was a hard to mow area and we hoped the deer and rabbits wouldn't be interested in scented and flavoured plants. This has worked well so we want to repeat the exercise

'Lasagne' mulching works by using layers of cardboard and garden waste to suppress and weaken the weeds in the dark underneath. The layers can vary according to the materials you have available, but try to maintain a balance of C and N. Cardboard is C rich and initially steals N to start decomposition, therefore plenty of N rich grass cuttings will help balance things out. Grass will generate heat as it decomposes so don't plant out into the bed immediately. Also, depending on the materials used, the bed could be quite coarse initially, so don't plant out seedlings that are very small, allow them to grow on first.

Order of works:

- cut down large weeds (no need to worry about mowing)
- generous card layer (wet the card)
- level using woody material (herb terrace only)
- layer of leaves
- card layer (wet the card)
- layer of manure / grass clippings / garden compost
- card layer
- mulch layer (woodchip)

The woodchip layer (and associated fungi) can also deplete N in the soil initially, so it is a mulch we'll plant through, into the compost layer. Using a compost tea, e.g. nettle or comfrey, can also help maintain N levels.

Plants for the herb terrace

We're yet to put in a windbreak, so don't want plants that grow too tall as these tend to experience damage
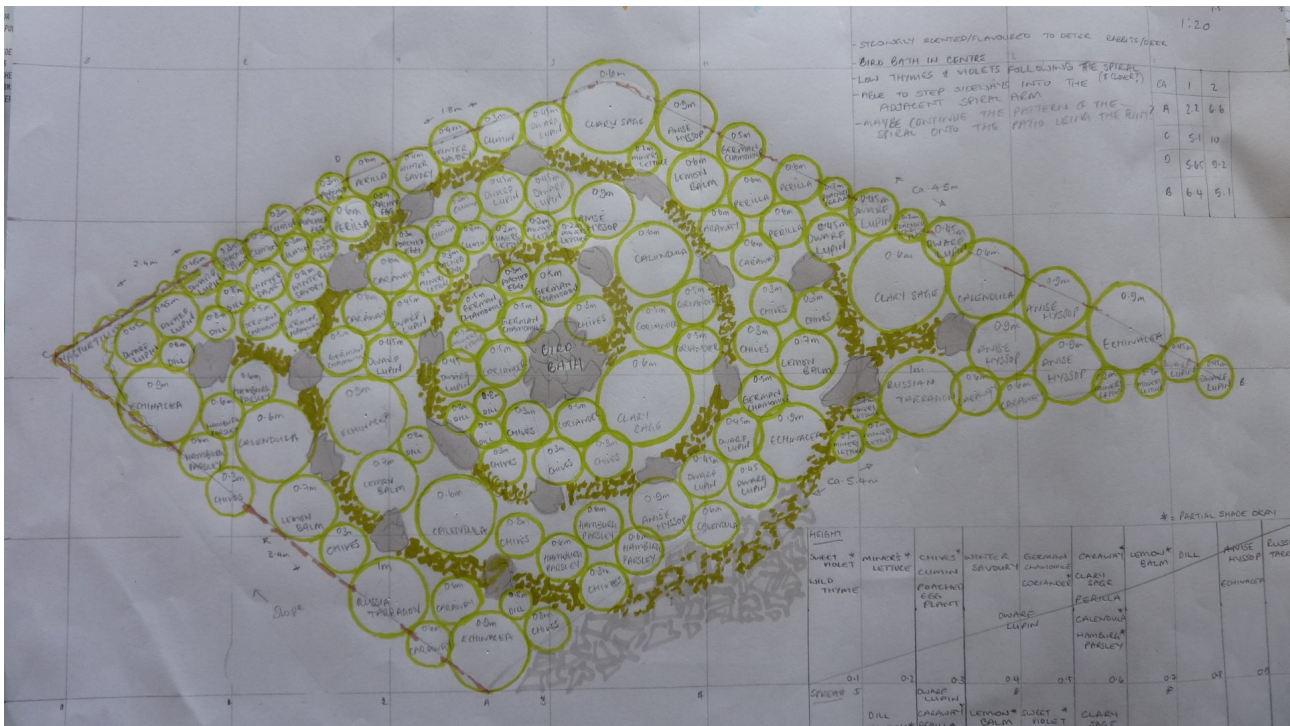
Perilla	0.6 x 0.3m	
Caraway	0.6 x 0.3m	
Clary sage	0.6 x 0.3m	Nectary, bird attractor
German chamomile	0.5 x 0.3m	Dynamic accumulator (K,P,Ca)
Chives	0.3 x 0.3m	Dynamic accumulator (K,Ca)
Sweet violet	0.1 x 0.5m	Dynamic accumulator (P)
Calendula	0.6 x 0.5m	Mulch, wildlife
Lemon balm	0.7 x 0.4m	Dynamic accumulator (P), Nectary
Dill	0.8 x 0.2m	Nectary, wildlife
Claytonia (miner's lettuce)	0.2m	Mulch
Nasturtium	Climber	Attracts aphids from other plants
Russian Tarragon	1 x 0.5m	Repels insects
Cumin	0.3 x 0.2m	Wildlife
Winter Savoury	0.4 x 0.3m	Wildlife, repels insects

Coriander	0.5 x 0.3m	Repels aphids
Anise hyssop	0.9 x 0.4m	Nectary, wildlife
Hamburg parsley	0.6 x 0.3m	Wildlife, repels insects
Creeping Thyme	0.1 x 0.3m	Nectary
Poached Egg Plant	0.3 x 0.2m	Nectary
Echinacea	0.9 x 0.5m	Nectary